

## BIBLIOGRAPHICAL NOTICES.

*General Outline of the Organization of the Animal Kingdom, and Manual of Comparative Anatomy.* By THOMAS RYMER JONES, F.R.S. Second edition. London, Van Voorst, 1855. 8vo.

ON the Continent, and especially in Germany, every important fact in the anatomy and development of animals is sure, in the course of a year or two from its discovery, to find itself embodied, with its consequences upon zoological classification, in one of the numerous manuals of Zoology or Comparative Anatomy with which the press of that country teems. Everything is thus brought within the reach of the student, who, at the commencement of his course, has merely to buy one of the most recent of these works, in order to place himself pretty nearly in possession of the actual state of the science.

To the English student, however, none of these advantages are offered; amongst the few books of this class and of any reputation, the best was probably the first edition of the work which we have now before us, and this, notwithstanding its undoubted merits, could by no means be regarded, even at the time of its publication, as perfectly free from faults. These, the interval of fourteen years which had elapsed since the book first made its appearance in the world, had certainly not tended to diminish, and it was therefore with no small satisfaction that we learnt that a new edition was forthcoming, as in it we fondly hoped that the English student might at last obtain an idea of the vast progress that has been made in Zoology within the last few years, without the necessity of resorting to foreign literature for this purpose.

In this hope, however, we regret to say we have been disappointed. In his second edition Professor Rymer Jones clings with astonishing pertinacity to the grouping adopted in his first, and if we are to take his book as our standard, zoological classification has made but little progress since the days of Cuvier; for we cannot see that the division of the Cuvierian Radiata into *Acrita* and *Nematoneura*, or the substitution of new names for the other three primary groups of that author, constitutes any great step in advance.

Retaining his old primary divisions, it is but just to say, however, that our author has sacrificed a little to the spirit of the times; but even where this is the case, he seems to be hampered by his prejudices in favour of his former views:—thus he adopts the group of the *Protozoa*, but still places it as a class of his *Acrita*; and the different sections into which these simple creatures are divided are mentioned in such a manner that it is utterly impossible to understand what comparative value the author attributes to them. Moreover he has actually introduced amongst the *Protozoa* a description of the *Spermatozoa*, a somewhat unnecessary addition one would think, especially as the author himself tells us that they are not independent organisms. Another step in the right direction is the adoption of the Class of *Hydrozoa* for the Hydroid polypes and Acalephs.

When we look into the remaining groups of the *Acrita* and *Nema-*

*toneura*, we find that the contents of these two great sections are positively identical with those of Cuvier's *Radiata*. The Flat-worms (*Cestodea* and *Trematoda*) are placed amongst the *Acrita*, and the Round-worms amongst the *Nematoneura*, and the latter division also contains the *Bryozoa*, *Rotifera* and *Epizoa*. The retention of the latter in such a situation is certainly calculated to astonish one, considering how well established is the close resemblance, we might almost say identity, between the young state of these anomalous parasites and the Entomostracous Crustacea; and we must confess that we cannot understand why the class of *Epizoa* should be condemned to figure so low in the scale of animal existences, whilst the epizootic genus *Nicotohœ* occupies an aristocratic position amongst the *Crustacea*. Equally inadmissible is the position assigned to the *Cirrhopoda* amongst the *Heterogangliata* (or *Mollusca*), in spite of the positive demonstration that we possess of their Annulose nature;—indeed we can only impute the retention of this unfortunate group of Crustaceans amongst such unsuitable neighbours, to some confusion of ideas on the part of Professor Rymer Jones, as he actually figures a complete Homogangliate nervous system as characteristic of the Cirrhopods, and places them in his list of the Homogangliate (or Annulose) Classes, at the end of his general chapter on Classification. It would almost seem as though Professor Rymer Jones were of opinion that the position of the *Cirrhopoda* in the Animal Kingdom might as well be settled by the ingenious device of tossing up, proposed, as we are told, by some truly American Statesman for the adjustment of the little difficulties existing between this country and the United States.

We should hardly have dwelt at such length upon these defects in a work which notwithstanding them possesses a great claim to consideration, but for the circumstance that the author leaves it to be inferred by his reader that the system adopted in it is *the* system, whilst he must be well aware that, so far from its being adopted by the majority of zoologists and comparative anatomists, it furnishes anything but a true picture of the generally received views of zoological classification. But the reader may seek in vain in the pages of this thick volume for anything like an admission that a different mode of arrangement is practicable, or for a confession that other writers place particular groups in a position different from that assigned to them by Professor Jones,—the nearest approach to anything of the kind consisting in references to resemblances between the *Epizoa* and *Rotifera* and the *Crustacea*, and a statement regarding the *Cirrhopoda*, that “it will not be surprising, if, after reading the details connected with their structure, some naturalists should prefer to regard them as belonging to the Homogangliate rather than to the Heterogangliate division.” We should think it by no means surprising; but we are rather surprised that, when he went so far, our author could not tell his readers, that the conclusion at which he more than half expected them to arrive was the one now generally adopted by the first zoologists both at home and abroad.

It may be urged, that as Professor Rymer Jones's work only pro-

fesses to treat of the comparative anatomy of animals, the question of classification is one of secondary importance as far as he is concerned; but this plea can hardly be admitted, inasmuch as a comparative anatomy must of necessity take a zoological classification for its foundation, and the nearer the truth we can bring this, the better will be our representation of the "organization of the Animal Kingdom."

Notwithstanding the faults above referred to, Professor Rymer Jones's work will be found to contain a most valuable outline of the structure and development of the different classes of animals, although it is to be regretted that, in the consideration of the latter portion of the subject, his unfortunate views of classification again step in, and certainly prevent his giving that importance to the earlier stages of some groups which they deserve, if indeed they have not induced him rather to throw them into the background, as matters of comparatively little consequence. The same circumstance of course prevents the reader from finding any reference in the pages of this book to the doctrine of a retrograde metamorphosis, which not only applies to such groups as the *Epizoa* and *Cirrhopoda*, but is also adapted to throw much light upon the position in nature of other anomalous animals, which have generally been puzzles to zoologists. As a general rule, however, the information seems to have been pretty carefully brought down to the present time, although we notice several omissions of greater or less importance in different parts of the work. One or two of these we may mention, as we can hardly understand how Professor Rymer Jones could have made them. Under the Cephalopodous Mollusca, we find not the slightest reference to those curious spermatophora the *Hectocotyli*; and in his description of the *bulbus arteriosus* in Fishes, our author states that it is of a muscular nature, although Professor Müller has shown that it is nothing of the kind in the ordinary fishes: and in mentioning the existence of the numerous valves in the arterial bulb of the Sharks, &c., he has taken not the least notice of the occurrence of the same structure in the Ganoid Fishes, although it is upon this character that the order *Ganoidea* now reposes. We can hardly suppose that Professor Rymer Jones is in utter ignorance of Müller's admirable paper upon the Ganoid Fishes, which has been published about twelve years, and must attribute his omitting to take any notice of it to its having in some way slipped from his memory.

However, with all these omissions and an occasional misstatement of minor importance, there can be no doubt that Professor Rymer Jones's volume contains an immense amount of valuable information, well put together, and adorned with all that elegance of language for which the author is particularly distinguished. As in his previous edition, he commences with the lowest forms of animals and proceeds from these upwards in the scale of existence to the Vertebrata, a mode of arrangement which certainly has many advantages. The numerous woodcuts with which the work is profusely illustrated are of the highest excellence and very well printed, whilst the general utility of the book is greatly increased by the admirable double index, con-

sisting in fact of two separate tables of contents, one giving a list of the subjects treated of in the order in which they occur in the subsequent pages; whilst the other or "Physiological Index" takes the different organs or their functions as the basis of its arrangement, and furnishes references to the particular paragraphs in which their nature in the various groups of animals is described, thus enabling the reader to trace any one function or organ from its first appearance to its full development.

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## PROCEEDINGS OF LEARNED SOCIETIES.

### ZOOLOGICAL SOCIETY.

May 8, 1855.—G. R. Waterhouse, Esq., in the Chair.

Mr. Gould exhibited a portion of a collection of birds formed by Mr. Hauxwell in a district lying on the eastern side of the Peruvian Andes, in the neighbourhood of the River Ucayali, one of the tributaries of the Upper Amazon. Mr. Gould observed, that the exploration of this particular district had been one of the earliest objects of his own ornithological ambition, but that until within the last few years no naturalist had visited it. The splendid collection sent by Mr. Hauxwell, of which the birds exhibited to the Meeting formed a part, fully bore out the anticipations entertained by Mr. Gould, that when explored it would prove one of the richest and most interesting ornithological districts with which we are acquainted.

Amongst the birds exhibited were some *Cotingas*, differing from the ordinary species found in the lower countries of Brazil, and remarkable from the splendour of their colouring, together with species of *Phaenicercus*, *Rhamphocelus*, &c., of the most dazzling brilliancy. As a contrast to these, Mr. Gould exhibited a series of dull-coloured *Thamnophili*, also contained in this collection, and remarked that this striking difference in the coloration of birds inhabiting the same locality was due almost entirely to their different degrees of exposure to the sun's rays; the brilliantly coloured species being inhabitants of the edges of the forests, where they fly about amongst the highest branches of the trees, whilst the others form a group of short-winged insectivorous birds, which inhabit the low scrub in the heart of the dense humid jungle, where the sun's rays can rarely, if ever, penetrate.

Mr. Gould also remarked, that the colours of the more brilliant species from the banks of the Ucayali, a district situated towards the centre of the South American continent, were far more splendid than those of the species representing them in countries nearer to the sea, and from this circumstance he took occasion to observe that birds from the central parts of continents were always more brilliantly coloured than those inhabiting insular or maritime countries. This rule applies equally to birds of the same species, the Tits of Central Europe being far brighter in colour than British specimens. Mr.